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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/492,146	01/27/2000	Takeshi Misawa	0378-0365P	9491

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EXAMINER

VILLECCO, JOHN M

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/492,146

Applicant(s)

MISAWA, TAKESHI

Examiner

John M. Villecco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 12-17 is/are rejected.
- 7) ☒ Claim(s) 4 and 6-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Abstract

1. The abstract of the disclosure is objected to because of a typographical error. It appears that applicant has inadvertently included a minor typographical error in line 10 of the abstract. More specifically, the word "incident" should be capitalized. Correction is required. See MPEP § 608.01(b).

Specification

2. The disclosure is objected to because of the following informalities:
- On page 25, lines 15-16, applicant has separated the word "reading" into "readi" and "ng".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 14-17 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding *claim 14*, applicant discloses in the claim language that based on the repeating supply of the row transfer timing signal, the signal charges of one of the separated colors is read

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out. It is clear from the specification that the row transfer timing signal is the horizontal transfer signal applied to the horizontal shift register (104d). It is also clear that the charges for all of the colors are read onto the horizontal register simultaneously and read out using the row transfer signal. See Figures 11-14 and 18-21.

6. *Claims 15-17* are rejected based upon their dependency to claim 14.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-3, 5, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada (Japanese Publ. No. 10-136391) in view of Tanaka et al. (U.S. Patent No. 6,130,420).**

9. Regarding *claim 1*, Yamada discloses an image sensor which includes a plurality of photosensitive cells (11-15) which are arranged two-dimensionally in an array. As shown in Figure 7 the cells are arranged obliquely from each other at positions shifted from each other by half of the pitch in both the horizontal and vertical directions. Additionally, Yamada discloses that the image sensor, which is inherently disposed in an image pickup section, includes a set of color filters for separating the incident light into red, green and blue components arranged in the column direction. In Figure 1, Yamada discloses an arrangement for reading out charge from the photosensitive devices (11-15). While not specifically disclosed, the arrangement of Figure 1

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would inherently include a signal reading out section for transferring the signal charge from the photosensitive devices (11-15) to the transfer registers (16-18).

Yamada, however, fails to specifically disclose the arrangement described in the claims for providing a whole-pixel readout mode and a thinning read out mode. Tanaka, on the other hand, discloses a camera with an all-pixel read out mode and a thinned readout mode. More specifically, Tanaka discloses a mode signal which is input to the timing generation circuit (20) wherein the timing generation circuit generates timings for reading out signals from the pixels (12). See column 4, lines 51-58 and column 5, lines 53-60. A CPU is used to issue operating instructions depending upon the mode in which the camera is (col. 8, lines 62-67). In this case the CPU acts as the mode setting section and the control section, while the timing generator (21) acts as the drive signal generation section. Additionally, in Figure 7, Tanaka teaches that the image signal output from the CCD is converted to a digital image by an A/D converter (103) and that the image signal is processed to form a picture. This arrangement allows for a low resolution image to be displayed on a monitor as a verification step while also enable a camera to pick up and store a high resolution image. This arrangement also reduces power dissipation. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the different modes of reading out pixels of Tanaka into the imager of Yamada so that power dissipation is reduced while also displaying low resolution images to the user for verification.

10. As for *claim 2*, Yamada discloses in Figure 7 that the filters are made up of the colors red, green, and blue.

11. With regard to *claim 3*, Yamada discloses in Figure 7 an alternate filter arrangement wherein each of the colors is aligned directly above or below a similar color. When using the

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teaching of Figure 1, it is obvious that each of the similar colors are output to the same column line. See column 9, lines 16-28.

12. Regarding *claim 5*, applicant makes no mention of the relationship between one unit and the supplying of drive signals in the claim language; therefore, the claim can be interpreted very broadly. For instance, the claim language includes eight transfer devices making one unit.

Tanaka discloses transfer devices (34). Since there is no relation to the number of pixels per transfer device or how the drive signals are supplied to the transfer device, Tanaka is interpreted such that eight of the transfer devices are one unit. Additionally, the drive signals supplied to the transfers sections are different between the all-pixel readout and the thinned pixel readout, since in the all pixel read out the signal V2' is supplied. Therefore, it is interpreted that the drive signal is supplied independently different, since the two driving methods are independent of each other.

13. *Claim 12* is considered a method claim corresponding to claim 1. Please see the discussion of claim 1 above.

14. *Claim 13* is considered a method claim corresponding to claim 2. Please see the discussion of claim 2 above.

Allowable Subject Matter

15. **Claims 4, and 6-11 are objected to** as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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16. Regarding *claims 4 and 8*, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest that the drive signal generation section supplies the drive signal to selectively drive the signal reading out section adjacent to each of the photosensitive cells by every other line. In this case the line is interpreted from the specification to be the column lines.

17. Claims 14-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

18. As for *claim 14*, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest generating a column transfer timing signal for setting a transfer distance to two lines for transferring the signal charges in a column direction after the field shift signal. In this case, as disclosed in the specification on page 12, lines 19-23, each line is supplied with four-phase drive signals to move the charge one line. Therefore, according to the claim language the charge is moved eight transfer sections according to the column transfer signal.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (For either formal or informal communications intended for entry. For informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington VA, Sixth Floor (Receptionist).


Any inquiry concerning this communication or earlier communications from the
examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460.
The examiner can normally be reached on Monday through Thursday from 7:00 am to 5:30 pm
EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the
organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the customer service desk whose telephone number is (703) 306-0377.



JMV
9/2/03



WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
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